



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,215	11/18/2003	James Meagher	5060-000132	4829
27572	7590	03/22/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			SCOTT, JAMES R	
			ART UNIT	PAPER NUMBER
			2832	

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/716,215

Applicant(s)

MEAGHER ET AL.

Examiner

James R Scott

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/18/2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 is/are allowed.
- 6) ☒ Claim(s) 15-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11182003</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **Drawings**

**The drawing sheets 1/4,2/4 and 3/4 are acceptable.**

The drawings are objected to by the Examiner because the hatching in figure 5 on sheet 4/4 does not correspond to the non-conductive hatching illustrated in figure 4 located on the same sheet. Label the retainer with a reference character and properly hatch the retainer and the printed circuit board 104' as plastic or synthetic insulating material. A proposed drawing correction pertaining to sheet 4/4 or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-18,19,20,22 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson. Note the member 11 rotatable relative to the base 23, spherical and tubular shaped conductor contacts 50,51, biasing springs and a plurality of first electrical contacts and second plurality of pairs of electrical contacts (36,etc; 31,32). The guiding slot constitutes the summation of individual slots which are spatially joined by the meandering area located between the plurality of pairs of the second conductors. The panel (not shown) constitutes the housing for the rotatable member.

Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Lemire. Note the printed circuit board in figure 1 and the spring biased first conductors 12 located in retaining portions of the rotatable member 56 which mounted to a base 60 which supports the printed circuit board 16. The guiding slot is of undulating configuration and is coincident with the arcuate line 14 in fig. 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson for reasons stated in the rejection of claim 15 and considered with Black, III et al. Johnson does not teach the use of redundant or dummy contacts. This teaching is well known in the rotary switch prior art as evidenced by Black III et al who disclose at col. 3, lines 50-58 that it is old to use fixed dummy contact points 62a, 62b. Accordingly it would have been obvious to one skilled in the art at the time the invention was made to provide dummy contacts wherever desired in the Johnson fixed or movable contact pattern in the manner as suggested by Black III et al in order to improve the operation of the movable and fixed contacts. Those skilled in the art would have recognized at the time that the invention was made that either the first or second conductors could constitute a fixed or movable redundant contact or conductor.

### ***Cited References***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. MacKay et al, Kaizaki et al, Yamamoto et al, Jones (608) , Jones (225), Shirai, Wilhaus, Petz, Block et al, Thornley and Cryer constitute prior art cited by applicant related to rotary switches. The most pertinent reference is the reference cite by applicant is Jones (225).

The following references are cited by the Examiner as relevant prior art:

Rhodes teaches the use of a ball 1,41 biased by resilient member 3,5 in an arcuate slot 2,45 having a plurality of first and second conductors 7,8; 43,48,47,46. Note figures 1 and 4. Hyodo teaches the use of a spring-biased ball 17 which depresses the membrane 13 and the conductive rubber 81-83 selectively to close a circuit at each switching site. Fowler et al disclose the use of a movable retainer plate 104 which includes a partial detent mechanism including a cylinder 129 and a ball 125 for biasing a first conductor 127,128 into engagement with at least one second conductor located on the printed circuit board at 21, 22,76. Sorenson teaches the use of a housing 16 for a movable member 14 of a rotary switch. Note spring biased conductive ball(s) which act as a bridging contact medium. In Fackler note the rotatable cam member at 128, 68a. In Overman note the plurality of rotating shafts 22-28 which include integral cam portions 46 for depressing a conductive membrane 48.

### **Statement of Allowability Claims 1-14**

Claims 1-14 are allowable since the prior art does not suggest the features of a retainer being coupled to a rotatable cam member and a bearing housed in the retainer

Art Unit: 2832

with the bearing pressing on a flexible pad comprising a resilient button having a conductive portion normally spaced from at least one printed circuit board electrical conductor and the flexible pad being pressed into engagement with the least one printed circuit board electrical conductor by the force exerted on the flexible pad by engagement of the cam member bearing with the flexible pad. The closest known prior art is Fackler, Jones (225) and Overman et al. Fackler has a rotatable cam member 120,68a which causes closure of a flexible membrane conductor with a conductor located on the printed circuit board and does not include a retainer for a bearing functioning as a cam member. Overman et al has a plurality of rotating shafts 22-28 which include integral cam portions 46 for depressing a conductive membrane 48 to cause shunting of the pairs of fixed contacts at each switching site by movable contact 49. Jones (225) has a switch configuration similar as Overman's. These latter two references are likewise deficient for failing to disclose a retainer for a bearing functioning as a cam member

### ***Conclusion***

Claims 1-14 are allowed. Claims 15-24 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James R Scott who can be reached at **(571) 272-1999 after 2/03/2004**. The examiner can normally be reached on weekdays from 1 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached at **(571) 272-1990 after 2/03/2004**.

Art Unit: 2832

**Effective immediately, all patent application related correspondence**

**transmitted by FAX to the USPTO must be directed to the central FAX number**

**(703-872-9306).**

JRScott: jrs

3/12/2004

JR Scott  
J. R. Scott  
Primary Examiner  
GAU 2832